

We claim:

1. A method of performing a single pass of an automated vehicle washing system relative to a vehicle, the vehicle having a rear end , a front end, and a length, the automated vehicle washing system having a gantry with one or more fluid nozzles attached thereto, the single pass being the
5 movement of the gantry in a single direction from a first location proximate one of the front end and rear end to a second location proximate the other of the front and rear end, the method comprising:

moving the gantry substantially parallel to the length of the vehicle from the first location to a third location at a first speed during the single pass, the third location being in between the
10 first and second locations; and

moving the gantry from the third location to a fourth location at a second speed during the single pass, the fourth location being in between the first and second locations and different from the third location, the second speed being different from the first speed.

2. The method of claim 1, further comprising moving the gantry from the forth location to the second location at a third speed during the single pass, the third speed being different from the second speed.

3. The method of claim 1, wherein the third location indicates a transition from one section of the vehicle having a height less than a predetermined vertical distance to another section of the vehicle having a height equal to or in excess of the predetermined vertical distance.

4. The method of claim 2, wherein the fourth location indicates a transition from one section of the vehicle having a height equal to or greater than a predetermined vertical distance to another section of the vehicle having a height less than the predetermined vertical distance.
5. The method of claim 3, wherein the predetermined vertical distance is between 40" and 46".
6. The method of claim 3, further comprising determining a height profile of the vehicle along the length of the vehicle relative to the predetermined vertical distance.
7. The method of claim 1, further comprising spraying cleaning solution on the vehicle during the single pass.
8. The method of claim 1, further comprising blowing air on the vehicle to dry the vehicle during the single pass.
9. A vehicle washing system for performing the method of claim 1.
10. A vehicle washing system comprising:
 - a gantry;
 - one or more sensors attached to the gantry for detecting a front end, a rear end and a height profile for a vehicle;

5 a motor operationally coupled with the gantry for moving the gantry relative to the vehicle along a path generally parallel to a longitudinal axis of the vehicle at a plurality of speeds; and

a controller electronically coupled with the motor and the one or more sensors, the controller adapted to (i) determine one or more locations along the vehicle based on signals from
10 the one or more sensors concerning the height profile, and (ii) change the speed of the gantry as the gantry passes the one or more locations while moving from one of a position in front of the front end and a position behind the rear end to the other of the position in front of the front end and the position behind the rear end.

11. The vehicle washing system of claim 10, wherein the plurality of speeds includes at least ten different rates of gantry travel.

12. The vehicle washing system of claim 10, wherein the plurality of speeds includes gantry speeds from 0.3 to 1.6 feet per second.

13. The vehicle washing system of claim 10, further comprising a plurality of turbo nozzles in fluid communication with a source of cleaning solution.

14. A method for washing a vehicle using an automated vehicle washing system, the vehicle having a rear end, a front end and a length, the method comprising:
moving a gantry relative to the vehicle;

spraying cleaning solution from one or more nozzles of a plurality of nozzles, the
5 plurality of nozzles being attached with the gantry, the plurality of nozzles being fluidly coupled
to a source of cleaning solution; and

varying the pressure of the cleaning solution sprayed from one or more nozzles of the
plurality of nozzles based on one or more positions of the gantry.

15. The method of claim 14, wherein said varying the pressure of the cleaning solution
sprayed from one or more nozzles further comprises selectively changing the number of nozzles
of the plurality of nozzles spraying cleaning solution.

16. The method of claim 14, wherein said varying the pressure of the cleaning solution
sprayed from one or more nozzles is based on a height of the vehicle at the one or more positions
of the gantry.

17. A vehicle washing system for performing the method of claim 14.

18. A washing system for cleaning a vehicle with a front end, a rear end, side surfaces, top
surfaces and a height profile, the washing system comprising:

a gantry;

a first set of one or more nozzles, the first set being configured to a spray cleaning

5 solution substantially on lower portions of the side surfaces of the vehicle, the first set being
attached with the gantry;

10 a second set of one or more nozzles, the second set being configured to spray cleaning solution substantially on upper portions of the side surfaces of the vehicle, the upper portions of the side surfaces being located vertically above the lower portions of the side surfaces, the second set being attached with the gantry;

a third set of one or more nozzles, the third set being configured to spray cleaning solution substantially on top surfaces of the vehicle, the third set being attached with the gantry;

a source of pressurized cleaning solution fluidly coupled with the first, second and third sets of nozzles through a plurality of fluid passageways;

15 a plurality of fluid control flow valves coupled with the fluid passageways for controlling the flow of cleaning solution through the passageways and the first, second and third sets of nozzles; and

20 a controller operationally coupled with the plurality of fluid flow control valves for selectively opening or closing one or more fluid flow control valves of the plurality of fluid flow control valves to cause the vehicle wash system to (i) spray cleaning solution from the first, second and third sets simultaneously during at least a first segment of a wash cycle, (ii) spray cleaning solution from the first set and not the second set or third set during at least a second segment of the wash cycle, and (iii) spray cleaning solution from the first and third sets but not the second set during a third segment of the wash cycle.

25

19. The vehicle washing system of claim 18, wherein the gantry is adapted to move along a path generally parallel to a longitudinal axis of the vehicle between at first location in front of the front end and a second location behind the rear end.

20. The vehicle washing system of claim 19 wherein, the controller selectively opens or closes one or more fluid flow control valves based on the height profile of a section of the vehicle that the gantry is passing as the gantry moves along the path.

21. The vehicle washing system of claim 18, wherein the pressure of the cleaning solution as the cleaning solution flows through one or more of the plurality of fluid passageways is less than 900 pounds per square inch when the vehicle washing system is spraying cleaning solution from the first, second and third sets simultaneously during the first segment of the wash cycle.

22. The vehicle washing system of claim 18, wherein the pressure of the cleaning solution as it flows through one or more of the plurality of fluid passageways is between 900 and 1100 pounds per square inch when the vehicle wash system is spraying cleaning solution from the first and third sets but not the second set during the third segment of the wash cycle.

23. The vehicle washing system of claim 18, wherein the pressure of the cleaning solution as it flows through one or more of the plurality of fluid passageways is greater than 1100 pounds per square inch when the vehicle wash system is spraying cleaning solution from the first set and not the second set or third set during the second segment of the wash cycle.

24. A vehicle washing system for cleaning a vehicle with a front end, a rear end and a length, the vehicle washing system comprising:

a gantry, the gantry including an elevated section, the elevated section being located vertically above the vehicle;

5 one or more nozzles, the one or more nozzles being attached to the elevated section
one or more fluid conduits coupling the one or more nozzles to a source of cleaning
solution; and

10 a dump valve, the dump valve being located vertically below the one or more nozzles in
between the source of cleaning solution and the one or more nozzles on a conduit of the one or
more conduits, the dump valve having at least a first position and second position, the first
position preventing the cleaning solution from draining from the dump valve, the second position
permitting a substantial portion of the cleaning solution in the one or more conduits and the one
or more nozzles to drain therefrom through the dump valve.

25. The vehicle wash system of claim 24, further comprising a controller, the controller being
operationally coupled to the dump valve for selectively switching the dump valve between the
first and second positions.

26. The method of claim 1, wherein the fourth location is the same as the second location.